

LUMEN 2014

New Requirements for Managers of Public Safety Systems

Barbara Kożuch^a, Katarzyna Sienkiewicz-Małyjurek^{b,*}

^aJagiellonian University, Institute of Public Affairs, Łojasiewicza 4 Str., Kraków 30-348, Poland

^bSilesian University of Technology, Faculty of Organisation and Management, Roosevelta 26 Str., Zabrze 41-800, Poland

Abstract

The current conditions of public safety systems require a broad management approach. This includes managing security issues related to all public policies, as well as giving proper attention to management issues. Thus, the thematic scope of public safety is wide-ranging, taking in social and criminal policy and crisis management.

The characteristic feature of public safety systems lies in the fact that each hazard requires an individual configuration of activities, performed by various units. This issue requires the need for proper preparation by the organizations taking part in shaping public safety, especially the managers responsible for coordinating activities in this field. In the traditional approach, the specificity of managerial competence has not been studied, particularly in the area of public management. The question therefore arises: What competencies should modern managers in the public security system possess, in order to provide a highly efficient implementation of activities? Finding an answer to this question is the goal of this paper.

The main findings of our study include: identification of the broad and narrow approaches to public safety, the characteristics of public safety as a complex adaptive system, and an analysis of the requirements of managers of public safety systems. As a conclusion, it was stated that managerial competencies in public safety systems should have an adaptive character, built on the basis of public safety, managerial knowledge and modern organizational capabilities, including organizational learning.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and peer-review under responsibility of the Organizing Committee of LUMEN 2014.

Keywords: Managerial competencies; public management; public safety system; complex adaptive system (CAS); organisational learning.

* Corresponding author. Tel.: +48-32-277-7314; fax: +48-32-277-7 61.

E-mail address: katarzyna.sienkiewicz-malyjurek@polsl.pl

1. Introduction

Safety is a fundamental human need, concerning all aspects of life. This is confirmed, among others, by the hierarchy of human needs, developed by A. Maslow and C. Alderfer, or the concept of needs proposed by H.A. Murray. One type of safety is public safety, which, as a category of public management, is considered to be the basis for a prosperous and well-functioning society, as it is derived from state policy (Choenni & Leertouwer, 2010). It also refers to geo-physical circumstances, existing and potential risks, as well as regional infrastructure. It involves the protection of communities in certain social areas, from risks that may stem from the behavior of people (social risk), technological developments (technical risk) and natural hazards. The subject matters and sources of public safety are wide-ranging, extending from social policy to regional policy and crime policy and to emergency and disaster management (Tomasino, 2011; Williams et al., 2009).

However, the characteristic feature of public safety lies in the fact that each hazard requires an individual configuration of activities, performed by various units. This issue requires the need for proper preparation by the organizations taking part in shaping public safety, particularly the managers responsible for coordinating activities in this field. In the traditional approach, the specificity of managerial competence has not been studied, particularly in the area of public management. The goal of this paper: What competences should modern managers in the public safety system possess, in order to provide a highly efficient implementation of activities? Thus, the goal of this paper is to identify new requirements for managers of public safety systems.

2. Methodology

This article presents results of the first task of grant entitled "Coordination, communication and trust as factors driving effective inter-organizational collaboration in the system of public safety management", funded by the National Science Centre, awarded by decision number DEC-2012/07/D/HS4/0053. This task is focused on mapping the processes of public safety management by specialized units at government and local level, and it was carried out from August 2013 to January 2014. Its implementation was based on the Desk Research methodology and included:

- analysis of peer-reviewed national and international publications, collected by using Scopus, ISI Web of Knowledge and Publish or Perish databases. They were selected on the basis of subject area, type of publication, and later, upon the analysis of abstracts. This research was supplemented by the analysis of available reports, bulletins, databases etc.;
- preparation of research tools, selection of research samples and the conducting of observations and semi-structured interviews;
- analysis of the findings.

The results presented in this publication include the sources and types of competencies which should be possessed by managers in the public security system, in order to ensure the effectiveness of the processes carried out in this area. The results are qualitative. Issues presented in the structure of the argument include: broad and narrow approaches to public safety, features of the requirements of managers of public safety systems, according to the complex adaptive system (CAS) theory, and identification of new managerial competencies in public safety systems.

3. New approach to public safety

The traditional approach to the issue of public safety focuses on achieving its goals through the formulation of appropriate public policies. However, the current circumstances require a new approach, in which proper attention is paid to the issues of management. Today, the shaping of public safety does not only involve lawyers and administration experts, but also experts in the fields of management, sociology, economics, political science, technology etc.

Activities aimed at public safety are undertaken by many organizations; however, the dominant role is played by public administration. These activities are performed in the framework of regional policy, social policy, fostering national culture, land use planning and economic innovation. Other entities are also involved in the formulation of these activities: intervention and rescue units (including fire brigades, police, emergency medical services, border guards, military police etc.), NGOs (i.e. voluntary services, humanitarian organizations and public interest

organizations), the society, universities, the media and the private sector. These units form a system of public safety in broad terms. However, the core of public safety includes the particular measures taken by specialized units to prevent and combat hazards. These units are properly prepared, trained and have the appropriate skills and knowledge, as well as adequate resources and tools. In the case of social risks, the leading unit is the Police, in the case of natural hazards – the State Fire Brigade, in the case of epidemics – the State Sanitary Inspectorate, in the case of epizootics – the Veterinary Inspectorate, etc. These specialized units operate in parallel and form a system of public security in narrow terms (see Figure 1).

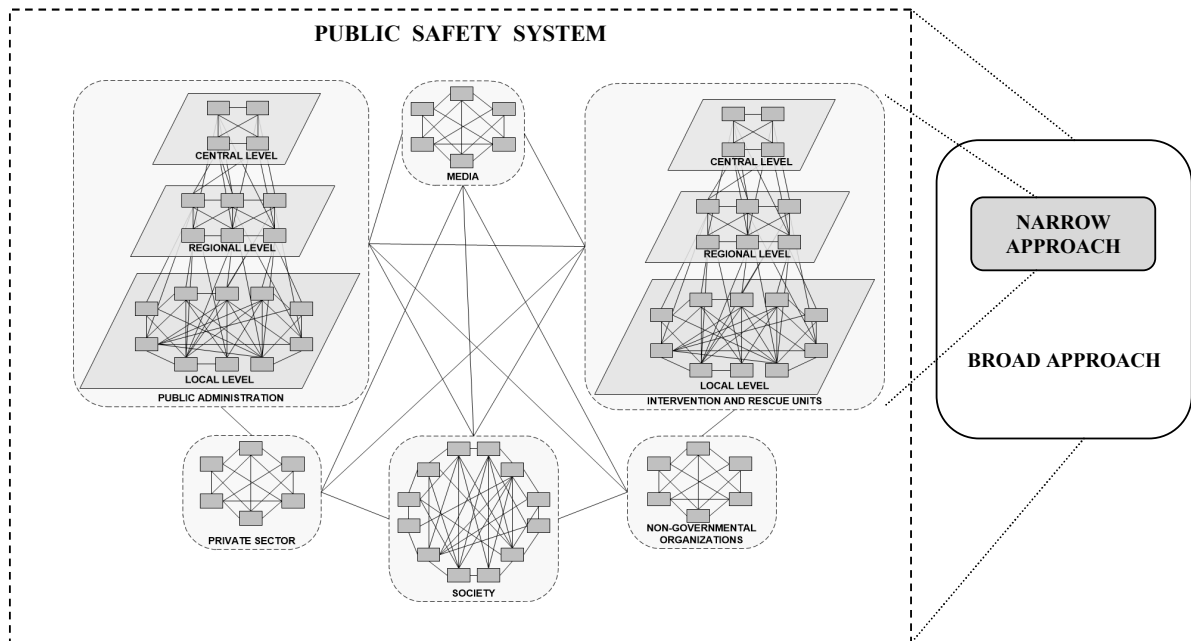


Fig. 1. Broad and narrow approach to public safety systems (developed based on: Sienkiewicz-Małyjurek, 2012).

The structure of the public safety system is flexible, depending on the direction of activities and existing hazards. In addition, this system is closely related to the environment in which it functions, and is limited by interdependence between the elements of the environment (Fedorowicz, Gogan & Williams, 2007). For this reason, public safety, particularly in narrow terms, might be analyzed as a complex adaptive system (CAS).

4. Requirements for managers of complex adaptive public safety systems

A CAS is a framework for the analysis of a public service organization (Comfort et al., 2004). It represents a system composed of interacting agents that respond to stimuli and stimulus-response behavior that can be defined in terms of "simple rules" (Benbya & McKelvey, 2006). CAS theory emphasizes the relationship between an organization and its external environment. This applies mainly to the adaptability of organizations managed by means of a traditional hierarchy and structure. Successful adaptation with regards to CAS is characterized by organizational learning, through the empowerment of bottom up and emergent processes (Espinosa & Porter, 2011). CAS typically shows two kinds of emergent properties: spontaneous order, due to the interactions of system elements, and innovation, due to evolution over time (Tilebein, 2006).

Public safety systems can only be properly comprehended if perceived by their overall character and in the context of their environment, which imposes high demands on managers responsible for implementation. These people take the decisions regarding all undertakings and assume personal responsibility for their course.

Requirements for managers of public safety systems against the background of CAS features (Benbya & McKelvey, 2006) are presented in Table 1.

Table 1. The role of managers of complex adaptive public safety systems (developed based on: Aydinoglu, 2013; Espinosa & Porter, 2011; Benbya & McKelvey, 2006; McKelvey, 1999).

CAS feature	Public safety characteristics	Requirements for managers of public safety systems
Large number of components	The activities are performed by organizations from different sectors, which are complex systems themselves. Organizations play a fundamental role in the safety of the public (public administration and intervention and rescue units) and operate at all levels of the state. Their activities support other entities of the system, including NGOs, universities, the media and the private sector.	co-governance, cooperation, negotiation, participation
Variation	A considerable amount of resources in varying amounts and configurations is dispatched towards the activities - differently in every case, depending on the needs.	planning and organizing activities, quick decision-making
Self-organization	System components are subject to continuous, spontaneous organization. The structures are formed under the influence of relations between elements of the system and between the system and its surroundings.	analytical skills, intuition, flexibility, creativity, innovation
Diversity	The system is aimed at preventing and combating social, natural and technical risks. The scale and nature of the hazards are the basis of the diversity of the actions taken.	persistence, perceptiveness, flexibility
Dynamism and liveliness	Every event, even of the same type, is different: takes place at another time, in another place, is subject to other conditions, is characterized by different dynamics and variability of development, other persons are exposed to the risk, the course of events is different, resources are distributed in different proportions etc.	quick decision-making, continuous learning, courage, flexibility, resilience, reliability, stamina, persistence, determination
Adaptation to their environment	Conditions for the implementation of activities create a need for an individual approach to each hazard, which adequately meets the emerging needs and requirements of the situation. System elements combine independent factors that create conditions for continuous and spontaneous adaptation to the changing environment.	quick decision-making, continuous learning, courage, flexibility, resilience, reliability, stamina, persistence, determination
Interactions	The units of a public safety system operate within the framework of cross-organizational collaboration, built on the basis of formal and informal relationships.	horizontal communication and coordination in complex and dynamic circumstances, relationship management
No-linearity	It is never known what the outcome of actions will be, and the measures implemented are not directly proportional to the achieved results.	imagination, intuition, analyticity, perceptivity
Selection	In any case, there are many ways and strategies to perform actions. Choosing the best solution lies with the person responsible for their implementation.	responsibility, quick decision-making, knowledge, experience

The features of public security systems with regard to CAS, as listed in Table 1, impose demanding requirements on the managers of these systems, which include qualifications, knowledge, skills and personality traits. This is due to organizational and situational determinants, as the development of events requires an increase in the responsibility of managers, and there emerges a need to possess such a set of competencies that would enable leading the activities, so as to meet the complexity and dynamics of change. For this reason, managerial competence is a prerequisite to an effective implementation of the public safety system.

5. Managerial competencies in public safety systems

In the public sector, managers are leaders at various levels, whose elementary duty is effective and economic management of organizations that deliver high quality public services. These managers solve problems in compliance, with the criteria of political rationality and taking into consideration economic rationality, typical of a market economy (Kozuch & Dobrowolski, 2014). They differ from managers operating in business, with a different value system and general attitude towards collaboration, and not mainly towards confrontation, as in the case with private enterprises. While what sets them apart from administrators focused on the law, is their organizational efficiency as a core value. The core competencies of public managers include the following skills: technical-

organizational skills (basic professional skills), program skills (capability to activate processes) and collaboration (Lane & Wolf, 1990). These competencies are based on the knowledge used in managerial work, experience, professionalism, ability and predisposition to achieve the objectives in pursuit of the public interest.

The specific character of public management is principally generated by relying on managerial activities with socially shared values. However, adopting specific values fails to constitute a condition sufficient for civil servants to earn the title of public organization managers. That requires fulfilment of all or a majority of the following criteria (Farnham & Horton, 1996; Demke, 2005; Naff, Riccucci & Freyss, 2013):

- responsibility for accomplishment of the public program or for provision of the product or public service,
- assessment on the basis of outcomes attained in accordance with clearly defined criteria and management objectives,
- assignment for positions and holding them under the contract of employment,
- assuming direct and indirect responsibility to the public institution,
- enjoying a significant level of autonomy in the decision making process,
- unconstrained disposition of tangible, financial information and human resources,
- performing the function of line managers, rather than advisors or consultants.

The notion of public managers' competencies is deemed as expertise used in managerial work, experience, capabilities and predispositions for achieving organizational goals, as well as social sensitivity (Virtanen, 1996). It must be also remembered that there is feedback between the ability to achieve organizational results and manager competencies, as the more the results and competencies are customized to specific requirements and situations encountered, the more positively they influence staff performance and their attitudes (Kożuch & Dobrowolski, 2014).

In the management of public safety, managerial competencies arise from the responsibilities and tasks assigned. The role of public administration is to create the conditions and to secure the resources necessary for the implementation of activities. The very completion of the planned undertakings is the responsibility of the relevant intervention and rescue units. In the course of the study, it was found that the managers of these units are required to have both the standard competencies of public managers, as well as specialized skills arising from the nature of public safety (Fig. 2).

Standard competencies include traditional skills of public managers that allow one to consider the public security system in the context of a larger socio-economic system. In turn, specialized competencies are necessary due to the situational conditions, in which there is no time to think, and in the in-depth analysis of potential actions. Among the specific competencies, interpretive skills, adaptive skills and networking might be distinguished. Interpretive competence refers to the proper understanding of a situation and preparing the concept of operations and implementing it effectively. Adaptive competence refers to proper adaptation of projects to existing risks, as well as motivating in terms of resilience and determination in action. Networking competence is focused on the ability to develop reciprocal meaningful relationships in the framework of safety systems, which allows managers to build effective tactical coalitions (Muijs et al., 2011; Gilchrist, 2009). In particular, these competencies make it plausible to conceive a range of solutions, from which the most appropriate ones can be picked (Kożuch, Sienkiewicz-Małyjurek, 2013).

The competencies of public safety system managers shown in Figure 2 facilitate not only operating reactively, but, above all "acting ahead of the course of events" and properly preparing for their occurrence. These competencies are developed by learning through experience, and they evolve with the advancement of the public safety system.

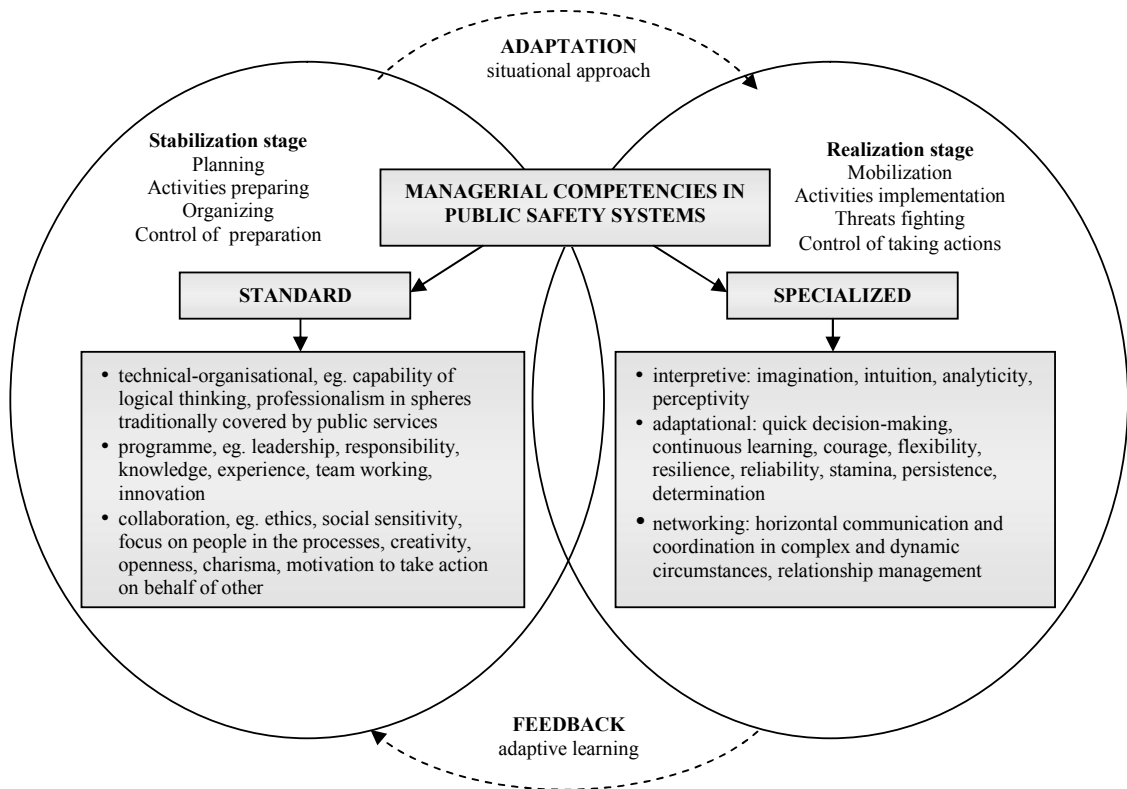


Fig. 2. Managerial competencies in the public safety systems

(developed based on: Kożuch & Dobrowolski, 2014; Tilebein, 2006; Comfort et. al., 2004; Abraham et. al., 2001; Virtanen 2000).

The modern approach to the new requirements for managers of public safety systems requires in-depth research. Expected competencies should be considered in conjunction with the main stages of conducting activities in the management of public safety. This implies the need to acquire competencies appropriate for the level of the stabilization stage. They include the nature of the standard competencies and in that, technical-organizational, program and collaboration skills. In addition, it is necessary to have specialized competencies for the running of the realization stage. They include interpretative, adaption and networking skills. Meanwhile, literature is dominated by a general approach to requirements for managers of public safety systems, which, in the light of the findings, is not able to provide the functionality of the system. The proposed approach to the competence of managers of public safety systems is characterized by the enrichment of traditional skills and includes them in the standard group and clarification of previously non-isolated specialist competencies. This approach may become the basis for the introduction of changes in the education of managers of public safety systems.

6. Conclusions

The main findings of our study are:

- Public safety is the result of actions taken by all the actors of socio-economic development (broad approach), and in the case of an occurrence of hazards, many specialized units become involved in the actions, in each case with a different force and in a different configuration (narrow approach). These units share a common goal and formal and informal relationships built on experience.
- In public safety, there are many ways of carrying out actions, depending on current conditions (i.e. social, political, economic and situational), to which the action should be adapted. For this reason, public safety can

be considered in terms of CAS. Selecting the best strategy depends on managers' decisions. Hence, managerial competencies are the primary determinant of the effectiveness of projects in the public safety system.

- The dynamics of change and situational uncertainty require managers of public security systems to possess both traditional and specialized competencies. In general, the competencies of these managers should have an adaptive character, built on the basis of public safety and managerial knowledge, and modern organizational capabilities, including organizational learning. In addition, specialized competencies allow managers to adapt to situational changes and unusual events.

References

- Choenni, S., Leertouwer, E. (2010). Public Safety Mashups to Support Policy Makers. In K.M. Andersen, E. Francesconi & A.G.T.M. van Engers (Eds.), *Electronic Government and the Information Systems Perspective* (pp. 234-248). Berlin Heidelberg: Springer-Verlag.
- Tomasino, A., P. (2011). Public Safety Networks as a Type of Complex Adaptive System. In H. Sayama, A. Minai, D. Braha, & Y. Bar-Yam (Eds.), *Unifying Themes in Complex Systems* (pp. 1350-1364), Proceedings of the Eighth International Conference on Complex Systems. New England: Knowledge Press.
- Williams, C., B., Dias, M., Fedorowicz, J., Jacobson, D., Vilovsky, S., Sawyer, S., Tyworth, M. (2009). The formation of inter-organizational information sharing networks in public safety: Cartographic insights on rational choice and institutional explanations. *Information Polity: The International Journal of Government & Democracy in the Information Age*, 14, 1/2, 13-29.
- Sienkiewicz-Małjurek, K. (2012). Sieciowe ujęcie współpracy międzyorganizacyjnej w zarządzaniu kryzysowym, *Współczesne Zarządzanie*, 3, 51-60.
- Fedorowicz, J., Gogan, J., L., Williams, C., B. (2007). A collaborative network for first responders: Lessons from the CapWIN case. *Government Information Quarterly*, 24, 4, 785-807.
- Comfort, L., K., Dunn, M., Johnson, D., Skertich, R., Zagorecki, A. (2004). Coordination in complex systems: increasing efficiency in disaster mitigation and response. *International Journal of Emergency Management*, 2, 62-80.
- Benbya, H., McKelvey, B. (2006). Toward a complexity theory of information systems development. *Information Technology & People*, 19, 1, 12 - 34.
- Espinosa, A., Porter, T. (2011). Sustainability, complexity and learning: insights from complex systems approaches. *The Learning Organization*, 18, 1, 54-72.
- Tilebein, M. (2006). A complex adaptive systems approach to efficiency and innovation. *Kybernetes*, 35, 7/8, 1087 - 1099.
- Aydinoglu, A., U. (2013). Toward a New Understanding of Virtual Research Collaborations: Complex Adaptive Systems Framework. *SAGE Open*, 3, 1-12.
- McKelvey, B. (1999). Avoiding complexity catastrophe in coevolutionary pockets. *Organization Science*, 10, 3, 294-321.
- Kożuch, B., Dobrowolski, Z. (2014). *Creating Public Trust. Organisational Perspective*. Frankfurt: Peter Lang.
- Lane, L., M., Wolf, J., F. (1990). *The human resource crisis in the public sector*. Westport: Quorum Books.
- Farnham, D., Horton, S. (1996). Public Managers and Private Managers: Towards a Professional Synthesis?. In D. Farnham, S. Horton, J. Barlow & A. Hondeghem (Eds.), *New Public Managers in Europe* (pp. 21-24). London: Macmillan Press Ltd.
- Demke, Ch. (2005). *Are civil servants different because they are civil servants?*. Maastricht: EIPA.
- Naff, K., C., Riccucci, N., M., Freyss, S., F. (2013). *Personnel Management in Government: Politics and Process*. Boca Raton: CRC Press.
- Virtanen, T. (1996). The competencies of New public managers. In D. Farnham, S. Horton, J. Barlow, A. Hondeghem (Eds.), *New Public Managers in Europe* (pp. 56-61). London: Macmillan Press Ltd.
- Tilebein, M. (2006). A complex adaptive systems approach to efficiency and innovation. *Kybernetes*, 35, 7/8, 1087 - 1099.
- Abraham, S., E., Karns, L., A., Shaw, K., Mena, M., A. (2001). Managerial competencies and the managerial performance appraisal process. *Journal of Management Development*, 20, 10, 842-852.
- Virtanen, T. (2000). Changing competences of public managers: tensions in commitment. *International Journal of Public Sector Management*, 13, 4, 333-341.
- Muijs, D., Ainscow, M., Chapman, C., West, M. (2011). *Collaboration and Networking in Education*. Dordrecht: Springer Science + Business Media.
- Gilchrist, A. (2009). *The well-connected community, A networking approach to community development*. Bristol: Policy Press.
- Kożuch, B., Sienkiewicz-Małjurek, K. (2013). Collaborative networks as a basis for internal economic security in sustainable local governance. The case of Poland. In K. Raczkowski & F. Schneider (Eds.), *The economic security of business transactions. Management in business* (pp. 313-328). Oxford: Chartridge Books.